

# Anchor Latch Liner-Hanger System Enables Liner Installation Without Operational Delays or NPT

## Objectives

- Prevent unwanted tubing movement in an offshore water-alternating gas (WAG) injection well. This objective is vital to preparing the well for subsequent pressure-injection operations.

## Our Approach

- Weatherford proposed and implemented a solution that met well requirements, eliminated the need to change the design of the completion packer and tubing hanger, and deterred undesirable tubing movement. The solution included a premium liner-hanger system, 3 1/2-in. upper completion with an anchor latch, and a 6 5/8-in. lower completion with an anchor latch polished-bore receptacle (PBR) to provide an anchoring point for the upper completion string.
- The team ran the liner and lower completion equipment to the desired depth and hung the liner in the 9 5/8-in. casing.
- The W-series liner-hanger running tools with dual mechanical ball seats facilitated installation of the liner on the first attempt without nonproductive time (NPT). The team set the liner-top packer and tested it to 2,500 psi (17.2 MPa).
- After completing the lower completion, the team deployed the anchor latch with seal assembly and stabbed into the anchor latch PBR. The team then pressured up the 3 1/2-in. upper completion tubing on the annulus to push and latch the anchor latch to the threaded latch profile on the PBR.
- The efficient installation enabled the operator to continue completion and production operations as planned.
- The latched and nonfloating upper completion enabled the client to carry out WAG injection procedures as part of an enhanced oil recovery program.

## Value to Client

- The Weatherford anchor latch liner-hanger solution not only eliminated costly operational delays for a completion redesign, but also provided a permanent static condition in the upper completion for future pressure-injection operations.
- The premium liner system enabled the client to install the 6 5/8-in. lower completion string in a single trip and without NPT.



The Weatherford anchor latch system has a design that supports many different applications and provides operational flexibility.

### LOCATION

Terengganu, Malaysia

### WELL TYPE

Offshore, development, WAG

### HOLE SIZE

8-1/2 in. underreamed to 8-3/4 in.

### CASING SIZE

9-5/8 in.

### LINER SYSTEM SIZE

6-5/8 in. × 7 × 9-5/8 in.

### TOTAL MEASURED DEPTH

8,425 ft (2,568 m)

### PRODUCTS/SERVICES

- Anchor latch with seal assembly
- Anchor latch PBR
- P-series hydraulic liner-hanger system
- W-series liner-hanger running tool
- Dual mechanical ball seats

